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June 7, 2019

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: *Ex parte* submission in GN Docket No. 18-122

Dear Ms. Dortch:

CBS Corp. ("CBS"), Discovery, Inc. ("Discovery"), The Walt Disney Company, Fox Corp. ("Fox"), Univision Communications Inc., and Viacom Inc. participate in the above-captioned proceedings as the "Content Companies."

On June 5, 2019, the following representatives of the Content Companies participated in a series of *ex parte* meetings regarding the above-referenced proceedings: Anne Lucey and Hardys Eggum of CBS and Showtime Networks Inc., respectively; Catherine Carroll of Discovery; Susan Fox, David Johnson, and Ricky Langer of The Walt Disney Company and Amy Klein of ESPN, Inc.; Ann Bobeck and Winston Caldwell of Fox; and the undersigned as counsel to the Content Companies. David Bender of Covington also participated in the first meeting listed below. The Commission participants in the meetings were as follows:

- Aaron Goldberger, Acting Wireless & International Advisor to Chairman Pai, together with Julius Knapp, Aspasia Paroutsas, Michael Ha, Jamison Prime, and Nicholas Oros of the Office of Engineering and Technology ("OET"); Jose Albuquerque and Kerry Murray of the International Bureau ("IB"); and Thomas Derenge of the Wireless Telecommunications Bureau ("WTB").
- Giulia McHenry, Rachel Kazan, Paul LaFontaine, Evan Kwerel, Becky Schwartz, Patrick DeGraba, Nicholas Copeland, Joseph Calascione, and Emily Talaga (via phone) of the Office of Economics and Analytics ("OEA"); and Don Stockdale, Anna Gentry, Thomas Derenge, and Paul Powell (via phone) of WTB.
- Will Adams, Legal Advisor to Commissioner Carr.
- Bill Davenport, Chief of Staff and Senior Legal Advisor to Commissioner Starks.
- Umair Javed, Legal Advisor, Wireless and International to Commissioner Rosenworcel.

During each of the meetings, the Content Companies emphasized the importance of the C-band to uninterrupted delivery of video programming. While fiber and other technologies play a role in distribution, these are complements, not substitutes, to the C-band. For example, ESPN uses both fiber and C-band downlinks in the production and delivery of content, but it is the C-band downlinks that ensure delivery of programming to all affiliates and other distributors. No other distribution method matches the C-band in ubiquity and reliability. The Content Companies and other programmers thus rely on the C-band as *the* principal means of delivering video to the many thousands of earth stations in the United States. These earth stations are located throughout the country in all manner of markets, ranging from large urban centers to small rural towns and everything in between, but all of them have reliable access to C-band downlinks.

The C-band also plays a crucial role in the creation of compelling news, sports, and entertainment programming. For example, in 2018, ESPN acquired nearly 29,000 sports feeds (e.g., of late-breaking developments, press conferences) over the C-band. These feeds came from a multitude of sources on transponders often not controlled by Disney or ESPN, and often with little notice. Moreover, ESPN has seen C-band utilization increase year over year, with an additional 1,300 feeds provided to it over the C-band in 2017-18. On one day alone last month, ESPN relied on 143 C-band feeds in the production of content.

Put simply, the C-band forms the backbone of the video distribution network in the United States.

With this in mind, the Content Companies pointed out that of the plans in the record for reallocation of C-band spectrum, only that of the C-band Alliance ("CBA") gives serious attention to how the Commission could preserve reliable video delivery over the C-band. Among other protections, a critical aspect of CBA's plan is that no more than 200 MHz of spectrum will be reallocated (inclusive of a 20 MHz guard band). The Content Companies also emphasized the interdependent nature of that 200 MHz limit and other technical protections essential to uninterrupted video delivery (e.g., appropriate out-of-band emissions masks, size of the guard band, preservation of full-band, full-arc coordination, to name just a few). Weakening of any one protection without sufficiently strengthening others would pose unacceptable risks to the delivery of video content to consumers.

During the meeting with members of OEA and WTB, the Content Companies also provided the attached, which was previously submitted in the record of this proceeding.

Please direct any questions to the undersigned.

Sincerely,

Matthew S. DelNero
Counsel for the Content Companies

cc: Meeting Attendees

Preserving the Invisible Infrastructure for Video Delivery in the U.S.

- The C-band forms the backbone of the infrastructure for delivering news, sports, entertainment and other video programming to some 120 million households (or over 300 million people) throughout the United States.
    - Whether a consumer gets TV via cable, satellite, or over-the-air television, the C-band is a critical link in getting programming to them.
    - There are no viable, scalable and reliable alternatives to use of the C-band for video delivery.
- Given the importance of the C-band to video delivery, we urge greater focus on how proposals to reallocate C-band spectrum will affect consumers' uninterrupted access to news, sports, entertainment and other video programming.
    - There ought be at least as much time and thought devoted to protecting video downlinks as there has been to the debate over private clearing vs. public auctions.
    - Any reallocation plan must demonstrate how it would protect video delivery over a repacked C-band, through, among other things:
        - The right technical safeguards;
        - Measures to maintain satellite capacity; and
        - Enforcement and oversight.
- Technical safeguards
    - C-band earth stations are very susceptible to interference. They have to receive a low-power signal from a satellite orbiting the Earth over 22,000 miles above the surface of the equator. Adjacent 5G operations easily could overwhelm reception of video downlinks if the FCC doesn't adopt the right technical protections.
    - First and foremost, maintaining reliable video delivery requires keeping at least 300 MHz available for video downlinks in the repacked C-band. Thus, no more than 200 MHz (inclusive of guard band spectrum) should be repurposed.
    - Protecting C-band downlinks from interference requires attention to multiple additional factors, including: (1) adopting a sufficient guard band between video downlinks and 5G transmissions; (2) setting reasonable power limits for 5G base stations and mobile units, so they don't overwhelm reception of low-power satellite signals; (3) keeping out-of-band emissions to a minimum; and (4) ensuring that any filters to be installed on earth stations meet or exceed any assumed levels of RF rejection.
    - Arriving at the right technical rules will require careful study and real-world testing, including by the FCC.
    - The FCC should abandon the proposal to allow fixed, point-to-multipoint transmissions in the repacked C-band, which would make a difficult spectrum

management task impossible. Adding fixed point-to-multipoint transmissions would put video downlinks at risk and reduce the ability to clear spectrum for 5G mobile use.

- Satellite capacity

    - Getting video downlinks to cable headends, broadcast affiliates, and other earth station operators requires capacity on satellites.

    - Overall capacity available in the industry depends upon both the amount of spectrum in the band and the number of satellites providing service over that spectrum. So, there is an inverse relationship between the amount of C-band spectrum available for video delivery and the number of C-band satellites necessary to meet video demand.

    - To put it simply, the less spectrum that is left for video downlinks, the more satellites we need in the sky.

    - With that in mind, the FCC should require any plan it approves to ensure that the necessary additional satellites will be launched and placed into orbit to maintain capacity for video downlinks.

- Oversight and Enforcement

    - Any repacking of C-band spectrum will be a risky and difficult task. We agree that there may be a productive role for a third-party administrator in facilitating a repacking. But with what is at stake, the FCC can't afford to delegate ultimate enforcement and oversight of spectrum clearing and use to a private party.

    - The FCC should incent the parties that stand to benefit from spectrum clearing to bring about a successful repacking that protects video downlinks.

        - For example, the FCC could provide that companies selling spectrum rights wouldn't receive those profits until after they've finished transitioning incumbents and have provided agreed-upon protections to video downlinks.

        - Likewise, mobile users shouldn't begin operations in a given market until the repacking process is successfully completed. And if new mobile or base station uses create interference, these carriers should have to stop operating unless and until they remedy that interference (e.g., by adjusting power levels).